

REMARKS

Claims 22-27 remain in the application. Claims 22 and 27 are the only claims in independent form. The present claims have been amended in order to further clarify the present invention and place the application in condition for allowance.

Claims 22-26 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. The Office Action states that the phrase "flexible hose assembly" is not recited in the application as filed. However, a Preliminary Amendment was filed with the present application. The Preliminary Amendment included additional subject matter inserted at page 2, line 25 of a previous Preliminary Amendment stating that the braided layer and dispersion were applied to create greater flexibility in the hose assembly. Further, the specification discloses at page 11, lines 33-35 that the braid provides strength to the inner liner upon bending. There is therefore sufficient support in the specification for the phrase "flexible hose assembly".

Claims 22-26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by or, in the alternative, under 35 U.S.C § 103(a) as being obvious over EP 439898. Reconsideration of the rejection is respectfully requested.

This issue of the present rejection is whether the hose of the present invention is identical to that of the prior art. The prior art hoses did not provide sufficient strength and flexibility/bendability for the consumers using the products. There was therefore a need to develop a better hose than those already available.

The Office Action states that the cited reference taught that one skilled in the art would provide a hose with a braided glass fiber thereon. Prior to the application of the glass fiber onto the tubing, the reference suggested that one

skilled in the art would have applied a fluoropolymeric dispersion onto the glass fibers employed in the braid. By performing this step, the finished tubing was provided with a dispersion that was completely coated and embedded in the glass fiber braid disposed about the extruded tubing. The Office Action states that while the pending claims at hand recite two separate dispersion coating operations, there is no reason to believe that the product produced by this process would have been any different from the product made by EP '898. However, it is respectfully submitted that the hose of the presently pending independent claims does provide a very different product than that which would be found using the method disclosed in the EP patent. The benefit of a hose assembly formed via dipping the single fiber as taught by the cited European patent application is that the single fiber, and therefore the resulting braid, has greater strength. In contradistinction, the benefit of the "double dipped" hose of the presently pending independent claims is that there is a greater bond strength between the braided layer and the inner liner, thereby creating a more flexible hose assembly.

With regard to the hose assembly formed utilizing the methods disclosed in the European patent, predipping fibers made the fibers more rigid and the resulting hose more rigid because the whole fiber serves as an anchor point. In other words, the entire piece of fiber is attached to the inner liner. By making the entire piece of fiber an anchor, this prior art hose is a rigid hose that is prone to kinking, and thus causes more problems. It is well known to those of skill in the art that kinking in the hose assembly is not beneficial, because any kinks in the hose may cause an increase in electrical charge within the fuel line. In contradistinction, the method of the present invention forms a hose assembly wherein only the interstitial spaces form the anchor points. Thus, more flexibility is created because the entire braid is not rigidly affixed to the inner surface of the hose. The benefit is that the hose assembly is not prone to kinking because the anchor points are only at the interstitial spaces. The hose assembly of the presently pending independent claims claim that the dispersion fills in gaps between adjacent fibers.

The flexible hose assembly of the presently pending independent claims is not disclosed or suggested by the cited prior art. In fact, the cited prior art does not disclose that any dispersion would fill in the gaps between the spaces of the thread or the use of such a dispersion to affix the braid to the inner liner.

As stated in the previously submitted Affidavit of Norman Martucci, one of the co-inventors of the present invention skilled in the art of making such devices and the methods of making the same, the "double dip" method (method of the present invention) provides results that were unexpected over the results obtained by the "single dip" method as disclosed in the EP patent. Mr. Martucci stated that the method of the European patent produces a hose assembly that is rigid, while the "double dip" method unexpectedly produced less variation in the strength of the bond and was more flexible. The "double dip" method and device provided a hose assembly different from those obtained by the European patent method and resulting device. Such results are not at all disclosed or even suggested in the reference. These results are *de facto* unexpected results. Since the hose assembly of the presently pending independent claims is flexible, it is more likely to be used by the major motor companies, because it will pass the more stringent quality control standards. Given this explicit teaching, there is no disclosure or suggestion for the hose assembly of the presently pending independent claims and reconsideration of the rejection is respectfully requested.

Claims 22-26 stand rejected under 35 U.S.C. 103(a), as being unpatentable over EP 380,841 in view of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach optionally further taken with Green. Reconsideration of the rejection under 35 U.S.C. §103(a) over EP 380,841 in view of any one of Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach optionally further taken with Green, as applied to the claims is also respectfully requested.

The Office Action states that EP 380,841 taught that it was known at the time the invention was made to form a fluorocarbon tubular core member and

braid upon the same. The Office Action states that it was notoriously well known in the braiding art to apply a coating to a tube prior to braiding followed by an application of the second coating in order to ensure complete encapsulation of the braided material within the coating material as evidenced by Arterburn, Busdiecker, Haren, Mathews, Gray et al., or Brumbach. However, when read more specifically, the Brumbach patent discloses using multiple layers of adhesive because more than one braided layer was utilized and in order for the braided layers to be affixed to one another, adhesives were required. Again, in the Arterburn patent, there is disclosed multiple layers of braiding for reinforcement of the tube. It is obvious to utilize multiple layers of adhesive because multiple braiding layers are used. Absent the use of multiple layers of braiding, there would be no need for multiple layers of adhesive because a single braided layer only needs to be affixed to a single inner liner.

In the Mathews patent, there is disclosed encapsulating the fibers of the braided material, braiding that material, and then utilizing an encapsulating adhesive material about the braid to affix the braided layer to the inner liner. However, there is no disclosure of the “double dip” method of the present invention. In the Haren and Gray et al. patents, there are disclosed the use of multiple layers of adhesive because more than one braided layer was utilized and in order for the braided layers to be affixed to one another, adhesives were required; and multiple layers of braiding were required for reinforcement of the tube. It is obvious to utilize multiple layers of adhesive because multiple braiding layers are used. Absent the use of multiple layers there would be no need for multiple layers of adhesive because a single braided layer only needs to be affixed to a single inner liner. Therefore, it has been shown that it is clearly known to those of skill in the art that when multiple layers of braiding are utilized, that multiple layers of adhesive must be used to adhere braided layers to the previous layers. There is no disclosure in any of the prior art patents for using more than one layer of adhesive for affixing a single braided layer.

Further, the Green patent specifically states that a single dip is utilized wherein the inner liner is dipped through material and then the glass fibers of a braid are added about the dispersion. The assembly is then heated to remove fluid and there is created a sufficiently cured fluorocarbon polymer material containing thereabout a braided layer. The method described is precisely what has been repeatedly taught in the prior art, that a single layer of dispersion can be used to apply a braided layer to an inner liner. There is no teaching in the prior art that multiple layers of the dispersion need to be applied when a single braided layer is used in a hose assembly. The present invention discloses that remarkably, the use of a "double dip" method as is disclosed and claimed, provides better bond strength and better flexibility of the hose. This is unexpected because it was common knowledge to those of skill in the art that the single dipping method would provide sufficient adherence of the braided layer to the inner liner. It is not known to those of skill in the art to utilize the "double dip" method. Instead, it was well known to those of skill in the art to use a single adhesive layer to apply a single braided layer to an inner liner. Multiple layers of adhesive were only utilized when more than one layer of braiding was applied to the hose. As stated in all of the prior art patents, multiple adhesives were utilized when a multiple braiding layers were applied. For example, if two layers of braiding were utilized, two layers of adhesive were utilized to affix the braids to the underlayers. There is no disclosure in any of the prior art patents to use an additional layer on top of the adhesive layers for affixing all of the braids to the inner hose. Since none of the prior art patents, alone or in combination, teach or suggest the hose assembly of the present invention, the present invention is patentable over the prior art, and reconsideration of the rejection is respectfully requested.

The remaining dependent claims not discussed above are ultimately dependent upon at least one of the independent claims discussed above. No prior art reference makes up for the deficiencies of that reference as applied

against the independent claims as no prior art reference discloses or suggests the invention as set forth in the claims as discussed in detail above.

In conclusion, it is respectfully submitted that the presently pending claims are in condition for allowance, which allowance is respectfully requested. Applicant respectfully requests to be contacted by telephone if any remaining issues exist.

The Commissioner is authorized to charge any fee or credit any overpayment in connection with this communication to our Deposit Account No. 11-1449.

Respectfully submitted,

KOHN & ASSOCIATES, PLLC



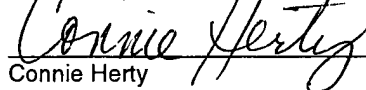
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